

## **The Center For Modeling Optimal Outcomes® LLC**

*“The Think Tank for Creativity & Innovation”®*

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### **Applying Neuroscience in Business**

#### **“Brief” on Disruptions in the Dimension of Focus (Over Focus)**

*The fully array of processes associated with the application of neuroscience in business cannot be explained adequately within a few written documents. To bridge the gap between neuroscientists and business professionals, however, The Center for Modeling Optimal Outcomes®, LLC (The Center) has chosen to explain some of the applications of neuroscientific activity in a context many non-scientists will be able to understand; relating decision making processes to neurological activity. To accomplish this objective, The Center has prepared two “briefs” to describe the two ends of the decision making spectrum; i.e. under and over focus. This document provides a basic overview of the impact that over focus can have on optimal decision making. A copy of the “brief” for under focus can found at: [Dimension of Focus \(Under Focus\)](#).*

*A more detailed explanation of the application of neuroscience in business can be found at The Center’s web site in the [Business Services](#) section within the document “[The Next Big Thing: Human Capital](#).”*

*To fully understand the dynamics of homeostasis of the neurohormones referenced herein, the reader must first gain an understanding of the [Model for Homeostasis](#) of the body’s substances. A tutorial for the Model is contained on The Center’s web site. After review of the tutorial, it also advised to read the “brief” for dementia in order to gain a basic understanding of the pairing of neurohormones that is required in order to maintain homeostasis/equilibrium of thought processes.*

*Details pertaining to the activities of The Center’s Business Services group and additional information concerning the intellectual property relative to neuroscience in business, including processes to create a culture of change acceptability by overcoming inertia for change, is available on the web site.*

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It is difficult and nearly impossible for individuals to identify their own cognitive idiosyncrasies. However, when someone reflects on the WHATs and WHYs aspects of decisions and behaviors of others, the process can open our minds (create awareness) in order to enable an individual to do an introspective analysis of their own thought patterns.

While the document may seem overly literal with regard to neural plasticity (wiring), the full effects of one's "wired" habits of thought is a concept that requires time consuming careful and deliberate analysis. Based on such study and its correlation to behavior, the impacts of neural wiring come into focus (i.e. patterns of subconscious thoughts as well as the resulting release of hormones - neurohormones - and all others that are triggered downstream from the brain and provide linkage back to the mind; i.e. thought processes).

Imperative for understanding the dynamics associated with subconscious decision making is the role of neurohormones that drive survival instincts; i.e. the 3 Fs – fear, fight and focus (aldosterone, adrenaline and norepinephrine respectively). From the aspect of evolutionary physiology, norepinephrine (focus) controls thought processes in such a manner as to limit the ability to lose attention from any issue or event deemed to be essential or related to a threat for survival. Human motivations are limited to only three factors; resources, recognition and altruism. While individuals are subject to varying levels and interplay between these factors on an ongoing basis, thoughts (even subconscious ones) relative to resources evoke instinctive reactions, one of which is described herein.

The concept of Functional Cognitive Singularity (FCS) is an instinctive subconscious defensive reaction to any issue that is perceived by one's mind as being an integral part of survival planning or activities (i.e. decision making).

As an example of FCS in the healthcare industry, the concept explains why many providers select one process; e.g. lean, Six Sigma, etc. as a potential solution for challenges regarding the need for cost and quality enhancement as opposed to parallel tracks that address both qualitative and quantitative aspects of organizational development.

With a full understanding of the concept and application of neural wiring in group (team) and organization-wide dynamics, the applicability of FCS in culture creation as well as in change inertia is critical. For example, some corporations are typically identified as having cultures associated with a particular focus; i.e. quantitative (e.g. lean or Six Sigma processes), innovation (e.g. 3M, P&G), or customer-centric service (e.g. retailers such as Neiman Marcus and Nordstrom). While a degree of cross-over exists within such companies to the extent where the focus (culture) does not preclude the ability to benefit from efforts to initiate processes to capitalize on alternative paths for excellence, the ability to excel in two or more parallel tracks has been nearly impossible. One example of the challenge to create multiple core foci was the experience encountered at 3M when [W. James McNerney, Jr.](#) became CEO (2001 – 2005) and attempted to interface the Six Sigma culture to the existing innovation culture. Simply, the underlying cognitive inertia associated with FCS precludes the ability to create multi foci without extra-ordinary planning and careful execution of the strategy.

Many corporations experience the side effects of FCS when processes are initiated to stimulate essential organization-wide concepts; e.g. innovation. While considerable planning and effort for strategy execution is placed on such initiatives, in nearly every instance, these critical endeavors deteriorate over time and merely become one of a litany of “programs” that lose momentum (fizzle), despite intense commitment and effort of the part of executive leadership. Simply, unbeknownst to experts in organizational development, consulting for innovation and even the most intuitive corporate executives, innovation processes as well as other such endeavors are, in reality, efforts to create a new culture. It should be recognized that culture formation is, in reality, a cognitive reaction driven by survival motivations (instincts).

The world's leading experts in change dynamics readily acknowledge that, even under good circumstances, change is extremely difficult and the acknowledgement of these obstacles relate to process change – not even the need to change or replace cultures. For example, John Kotter, widely recognized as the “guru” of change methodologies wrote, “Until changes sink down deeply into the culture, which for an entire company can take three to ten years, new

approaches are fragile and subject to regression.”<sup>1</sup> Simply, changes within a culture are a daunting task subject to regression – literally changing an entire culture (creating a new or overarching one) is perceived to be nearly impossible.

Consequences of FCS are not limited to the healthcare industry or corporate America. With a basic understanding of scientific research, the impact of this cognitive idiosyncrasy becomes apparent; i.e. why scientists cannot shift their focus away from the “how” in research and onto the “why” issues that create disruptions within the body (disorders and diseases).

"Science is wonderfully equipped to answer the question 'How?' but it gets terribly confused when you ask the question 'Why?'"

-Erwin Chargaff (1895-2002)

### **Examining FCS in Practice**

A cognitive idiosyncrasy somewhat related to Occam’s razor is the process we have dubbed functional cognitive singularity (FCS). An individual’s decision making processes are usually impacted by FCS when they believe all available mental energy and focus has been placed on identifying what they believe is the optimal avenue to pursue in order to solve any given task or challenge.

After a decision is made, based on FCS, the individual is unlikely to pursue alternative avenues to accomplish the objective until the primary method has been proven to be ineffective or unsuccessful.

Overcoming thought processes driven by FCS can be quite difficult unless a concerted effort is made to prepare a listing of options; ranking in order of likelihood of success. As each initiative to given optimal attention and effort, the second option must be pursued immediately; followed by the third, etc. – i.e. prior to finalization of the first or subsequent initiatives.

Since the objective of any challenge is a positive outcome, one’s cognitive idiosyncrasies must be overcome by shifting motivation to becoming outcome driven as opposed to being committed to a singular process. This ability to neutralize FCS is compounded by one’s neural wiring and the propensity to follow habits of thought. Accordingly, in order to shift thought patterns away from established “habits,” an individual must make a conscious determination that FCS is hindering their ability to create multiple foci. A useful tool to assist with breaking the pattern of “programmed or predetermined” thoughts that are prompted by established neural wiring is to modify ritualistic behaviors as well as the work environment in order to mitigate the habits. An example would be to avoid the habit of reading one’s emails as the first order of business because the practice can prompt thought patterns that reinforce focus onto current initiatives, create new projects or processes unrelated to the primary objective, usurp valuable time and mental energy by establishing new interests that are attractive due to FCS, etc. Another helpful hint may be to shift the work environment from one’s desk or work area to another location. This process can be helpful to overcome traditional unconscious thought patterns prompted by the routine work environment.

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<sup>1</sup> John Kotter, *Leading Change*, Harvard Business School Press, Boston, MA, 1996, p.13

Creating multiple cultures or changing one within a corporation is highly complex and nearly impossible without gaining expertise in the application of neuroscience in change dynamics, neurobiology associated with neural plasticity and organizational development. The Center for Modeling Optimal Outcomes<sup>®</sup> has developed the innovative processes for the application of the neuroscientifically based processes necessary to execute such endeavors in business settings.<sup>2</sup>

### **“Stubbornness” As Opposed to FCS**

The process of being able to change one’s mind is often confused with being limited to one’s prerogative. In reality, however, the unwillingness to change (perceived as stubbornness on the part of others) is an issue of neural plasticity whereby habitual thoughts create neural wiring that subconsciously controls one’s decision making processes. These “wired” subconscious thought patterns literally preclude one’s ability to recognize the existence of such a thought pattern or the problems associated with this cognitive idiosyncrasy.

While several cognitive idiosyncrasies exist that prevent individuals from being open minded, one of the primary contributing factors is neural plasticity driven by habitual thoughts fueled by norepinephrine and the subsequent depletion of dopamine; i.e. the outcome is change resistance (low dopamine) with a focus on one’s established beliefs (high norepinephrine).

Group dynamics, the process of collective cognitive alignment associated with “silozation,” homeostatic neurohormone configuration that result from habitual thought patterns and subsequent wiring due to neural plasticity contribute to the inability of groups or entire organizations to be able to willingly change.

Clayton Christensen, Jerome Grossman and Jason Hwang expressed the tacit understanding of the outcomes of these group dynamics when they wrote “those within a business model cannot disrupt themselves” in their recent book; *The Innovator’s Prescription*.<sup>3</sup>

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<sup>2</sup> Patents pending

<sup>3</sup> Clayton Christensen, Jerome Grossman, Jason Hwang, *The Innovator’s Prescription*, McGraw-Hill, New York, NY, 2009, p.20